UCR | Marlan and Rosemary Bourns College of Engineering

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

$8M+
FY18-19 RESEARCH GRANTS

13
FELLOWS OF PROFESSIONAL SOCIETIES

11
NSF CAREER AND YOUNG INVESTIGATOR AWARDS

32+
FACULTY MEMBERS

200+
GRADUATE STUDENTS

450+
UNDERGRADUATE STUDENTS

DEGREES OFFERED

B.S.

- Electrical Engineering
- Computer Engineering
- Materials Science and Engineering

M.S.

- Electrical Engineering
- Computer Engineering
- Materials Science and Engineering
- M.S. Online

B.S. + M.S.

- Electrical Engineering
- Computer Engineering

PH.D.

- Electrical Engineering
- Materials Science and Engineering

UNDERGRADUATE FOCUS AREAS

ELECTRICAL ENGINEERING

Communications, Signal Processing, and Networking

Control, Robotics, and Machine Intelligence

Embedded Systems and VLSI

Nanotechnology, Advanced Materials, and Devices

Power Engineering

COMPUTER ENGINEERING

Compilers and Operating Systems

Computer Architecture and CPU Design

High-Performance Computing

Real-Time and Embedded Systems

VLSI and Electronic Design Automation

M.S. THEMES

Advanced Materials and Devices

Communications and Signal Processing

Embedded Real-Time Systems

Internet of Things

Nanoscience and Nanotechnology

Robotics and Computer Vision

Smart Grids and Power Systems

AREAS OF RESEARCH

COMMUNICATIONS & SIGNAL PROCESSING

- Investigation and development of communication and signal processing theories
- Algorithms and systems for wireless and network communications
- Video and multimedia technologies

INTELLIGENT SYSTEMS

- Theoretical foundations and applications of computer vision, machine learning, and pattern recognition
- Cyber-physical and autonomous systems
- Intelligent transportation systems, multimedia technologies, and image/video bioinformatics

COMPUTER ENGINEERING

- Design and implementation of hardware and software systems
- Computer architecture, VLSI design, real-time and embedded systems
- Networked systems from small scales (e.g. Internet of Things) to large scales (e.g. data centers)

NANOSCALE MATERIALS, DEVICES, AND CIRCUITS

- Theoretical, computational, and experimental investigation of nanostructures
- Development of new bio- and opto-electronic materials, devices and circuits
- MEMS

CONTROLS AND ROBOTICS

- Theories and methods of modeling, identification and design of highly complex control systems
- Planning and analysis of motion, navigation and control of autonomous vehicles and robotic systems

POWER SYSTEMS AND SMART GRID

- Development and demonstration of smart grid applications
- Power system analysis and optimization
- Electricity market design
- Renewable energy integration
- Power system security


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MAJOR FACILITIES & RESEARCH CENTERS

AUTONOMOUS ROBOTS AND CONTROL SYSTEMS (ARCS) LAB

Fundamental robotics research enabling robust, adaptive, and resilient planning and control of teams of legged and aerial robots in dynamic and uncertain environments.

CENTER FOR ENVIRONMENTAL RESEARCH AND TECHNOLOGY (CE-CERT)

CE-CERT is a world-leading research center focused on improving air quality, transportation, and energy for a sustainable future.

CENTER FOR NANOSCALE SCIENCE & ENGINEERING NANO-FABRICATION FACILITY (CNSE)

Class 100/1000 cleanroom facility, fully equipped for advanced nanofabrication and characterization.

CENTER FOR RESEARCH IN INTELLIGENT SYSTEMS (CRIS)

Conducts cutting-edge research on the foundations and applications of intelligent and autonomous systems, including robotics, computer vision, machine learning, real-time systems, and biomedical systems, among others.

CENTER FOR UBIQUITOUS COMMUNICATION BY LIGHT (UC-LIGHT)

UC-light is a UC system-wide research program focused on developing LED-based optical wireless communications technologies and systems.

PHONON OPTIMIZED ENGINEERED MATERIALS (POEM) CENTER

Materials characterization research focused on phonon and thermal properties of advanced materials.

WINSTON CHUNG GLOBAL ENERGY CENTER (WCGEC)

Renewable energy center focused on developing emerging energy solutions related to storage, generation and distribution.

HIGHLIGHTED AWARDS AND RESEARCH GRANTS

Department receives $895,000 DOE GAANN award to support doctoral students

Distinguished Professor, Alexander Balandin, receives Brillouin Medal for graphene phonon research

Assistant Professor, Ran Cheng, receives 5-year DOD MURI Award for anti ferromagnetic spintronics

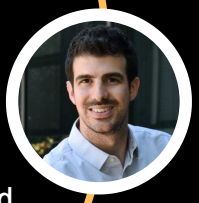
NSF-funded research for developing energy saving techniques in heterogeneous data centers

NSF-funded research for developing new algorithms to improve the reliability and resilience of VLSI chips

Associate Professor, Shaolei Ren, receives an NSF research grant on Edge Data Centers

Two professors named IEEE Fellows and another elected as an NAI Fellow

Multidisciplinary faculty team awarded $1.2M ONR grant to make artificial intelligent systems smarter



Assistant Professor, Salman Asif, receives Google Faculty Research Award

Assistant Professor, Samet Oymak, receives new CPS grant

MAJOR FUNDING AGENCIES

Google

IBM

NSF

cisco

intel

DISCOVER INNOVATE ARL TRANSITION

Office of Naval Research ONR Science & Technology

NIST

DARPA

FHWA

NASA

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